The GRCH crosses provincial boundaries and is a culturally important species that influences the lifestyles and traditions of aboriginals, local resident hunters, and others who share an interest in this valuable resource. In all likelihood, the GRCH will continue to decline given what we currently understand about the existing demographics and population trends of the herd. Although harvest is not the reason for the decline, continued harvest of the GRCH is likely to promote further and faster population declines and will have an impact on the rate at which it might recover in the future.

By Shannon Crowley

and curse

As we swat at the mass of assorted biting insects that follow us into the helicopter, each one of us also has a smile on our face. It is July 2010 and these are just the conditions we

have been waiting for to complete a photo census of the George River caribou herd (GRCH) in northern Labrador and Quebec. The photo census relies on the formation of dense aggregations of caribou about a month after calving. Caribou often form these dense aggregations on hilltops in an effort to find relief from biting insects.

A marked sample of caribou with satellite/radio collars is used to locate caribou aggregations. Once located, caribou groups are photographed with high-resolution digital cameras from helicopters. Caribou are later counted on the photographs and the marked sample of satellite/radio collared caribou in the photographed groups is used to estimate the total number of caribou in the population.

The George River caribou herd, which moves between the Quebec-Labrador peninsula, has gone through extreme fluctuations throughout history, not unlike many other migratory caribou populations throughout North America.

Continued Page 2



Above, wildlife biologist David Elliott weighs a George

River caribou calf: Photo by Vincent Brodeur. Right,

News from the Wildlife Division Summer 2011

Photo by David Elliott.

biologist Shannon Crowley captures a collared caribou:

The GRCH increased

from 15,000 caribou in the 1950s to close to 800,000 in the late 1980s (Figure 1). Our photo-census results from 2010 placed the population at 74,000;

an 81 per cent decline from the previous census estimate of 385,000 in 2001. The census result is supported by other biological indicators of herd health.

Low calf recruitment, low adult survival measured from collared caribou, and observations from user groups all corroborate a significant decline in the GRCH. For example, calf recruitment recorded during the fall was 17 calves/100 cows; a declining trend since the 1970s (Figure 2). High adult mortality rates throughout this past winter and spring provide further evidence of a continued and severe decline.

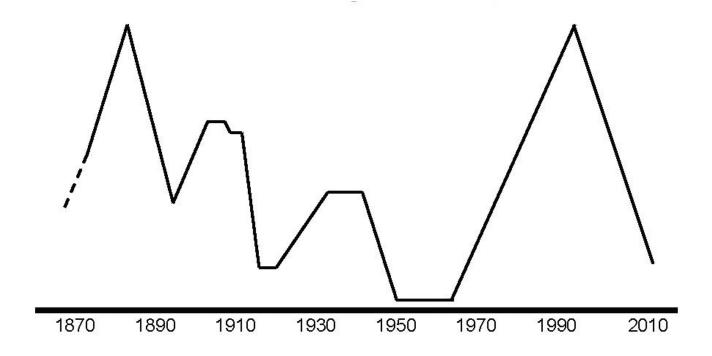
The cause of this decline is unknown, but there is some evidence that changes in the quality, quantity, or accessibility of forage resources may be a contributing factor. Other factors such as human harvest, predation, disease and parasites, and the effects of climate and/or human related influences on the landscape can contribute to the population decline. At population lows these factors have a greater effect and can lead to a further and faster rate of decline.

Differences between current and historic climate conditions, land use practices, and harvest methods provide further need for caution when managing for the future of GRCH. Good biological, harvest, and environmental monitoring efforts during this time period are especially important for providing the critical information needed for future management decisions. Monitoring indicators of herd health also allows us to formulate more specific hypotheses about the mechanisms behind the decline and initiate additional research into these areas.

Continued Page 3



Relative Abundance of George River Caribou, Quebec/Labrador



(Adapted from Bergerud *et al.* 2008, "The Return of Caribou to Ungava")

Figure 1

Calf Recruitment: Average Calves/100 Cows

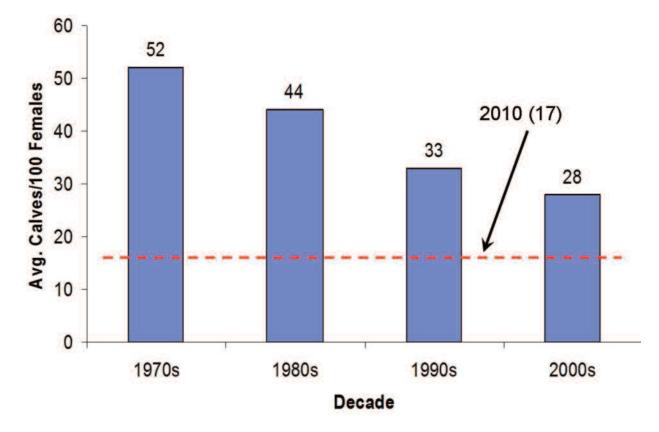


Figure 2



Capturing caribou calves

in early June just after females give birth is not easily accomplished by biologists in poor physical shape. Strong running legs and lungs and a

comfortable pair of boots are a requirement of the job. To capture calves, the helicopter lands several hundred feet from a caribou cow/calf pair and the biologist must run long and fast over rough terrain for a successful capture by hand.

It is June 2011, and we are capturing caribou calves to record birth weights and size to improve our understanding of the causes of the GRCH decline. Calf size and condition is one of several important indicators used to determine the health of the caribou herd. On this trip, we also expand our monitoring efforts by placing satellite collars on yearling caribou, allowing us to monitor survival rates and causes of mortality, distribution and movement patterns, and habitat use of known-age individuals.

It was the population estimate in 2010 in combination with other biological indicators of herd health that led to both the announcement of harvest restrictions in November 2010 and the Labrador Caribou Initiative in April 2011, which includes: increased biological monitoring and research efforts; increased harvest monitoring; adaptive management from monitoring activities; enhanced licencing, education and stewardship programs; the formation of stakeholder working groups, advisory boards, and technical committees; and the development and implementation of a management plan for both the short- and long-term conservation of the GRCH.

The Government of Newfoundland and Labrador is dedicated to the conservation and management of the GRCH and looks forward to continuing and expanding partnerships with stakeholders built on the common interest of caribou conservation. Cooperation and participation by all stakeholders is critical to developing and implementing successful management strategies, addressing current issues, and communicating ongoing and future research and monitoring initiatives involving the GRCH.

Background photo, aerial photography of George River caribou. *Photo by Shannon Crowley*. Top, wildlife biologist David Elliott with a George River caribou calf. *Photo by Vincent Brodeur*. Centre, a calf is weighed. Bottom, free to go. *Photos by David Elliot*.



NEW MINIMUM SIZE BROOK TROUT REGULATIONS ADOPTED FOR JONATHAN'S BROOK WATERSHED

fish resource management in Newfoundland and Labrador is under the authority of the federal Department of Fisheries and Oceans (DFO); however, the Wildlife Division contributes to the management process through annual research and monitoring initiatives, and is also responsible for licensing inland fish anglers.

Results from these efforts are compiled and submitted to the Canadian Science Advisory Secretariat (CSAS) of DFO and presented at annual meetings. The Wildlife Division has been influential in the adoption of management recommendations in several watersheds in the province including, most recently, a new brook trout (*Salvelinus fontinalis*) fishing regulation on the Jonathan's Brook

Watershed. This change represents the first minimum size limit established in the province and is a success story for the Wildlife Division.

Brook trout have long been considered a popular game fish for residents of Newfoundland and Labrador. Historically, trout have been managed through the manipulation of bag limits and season lengths because they are easily understood by anglers, fish and game officers, and the judicial system. However, in areas where angler numbers are great, exploitation rates may be too high to effectively manage the resource through seasons and bag limits. An alternative or complementary management strategy, which takes into account the exploitation rate, is the application of minimum size limits, estab-

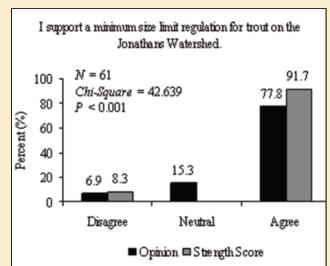


Figure 1: Statement presented to anglers during Jonathan's Brook watershed social survey.

I support a minimum size limit regulation for trout on the

Jonathans Watershed.

I support a minimum size limit regulation for trout on the duction.

The Jonathan's Brook watershed, located near the Town of Gander, Newfoundland and Labrador, is a popular location for angling brook trout. Anecdotal evidence indicated that brook trout caught in this system historically exceeded 1 kg in weight, though conservation groups and anglers suggested that both the quantity and size of brook trout in this system had declined.

There was also concern that regulations based on bag limits and season dates that had been in place were ineffective for sustaining the fishery.

To address these concerns, the Wildlife Division initiated a stock assessment program in 2004. This multi-year program consisted of an angler survey (to measure catch), combined with an intensive spring sampling program to gather information on brook trout abundance, age, length, weight, and maturity. Attitudinal surveys were also conducted to gather anglers' impressions regarding the fishery and to identify acceptable alternative management strategies.

These studies led to several significant findings:

- Anglers believed fish stocks had declined and additional management measures were required.
- The majority of brook trout being removed from the population were aged three and four.
- On average, fish were being removed from the population one year after reaching sexual maturity (i.e. after becoming reproducing adults).
- More than 70% of fish have reached sexual maturity by age three. The average length of a three-year old fish from the Jonathan's Brook Watershed is 23 centimetres.
- There was strong support from anglers for regulatory change that included a size-based regulation.

Based sion recommended a minimum retention size of 23 centimeters be established for the Jonathan's Brook Watershed. DFO accepted these recommendations and implemented the change during the spring recreational fishery of 2011. This new measure provides an opportunity for of the majority of brook trout in the watershed to spawn at least once before being harvested and will help ensure the sustainability of the resource for future generations. Additionally, the Wildlife Division has committed to monitoring the effects of the new regulation using multiple sampling initiatives in the future.

For more information on this new management regulation, please consult the online Anglers' Guide at: http://www.nfl.dfo-mpo.gc.ca/e0005597. A copy of the CSAS report is available online: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2010/2010_095-eng.html



Brook Trout Life History

- Brook trout are found in cool, clear, well-oxygenated streams and lakes, and tend to prefer temperatures less than 20°C.
- They are relatively short-lived. In insular Newfoundland, fish may live up to eight years, though in Labrador they may live up to 12 years.
- Diet is extremely variable and may include insects, worms, mollusks, mice, and even their own eggs and young.
- Brook trout spawn in the fall (September to November). Preferred spawning areas are cool, clear headwater streams with clean, ventilated gravel in water depths of approximately 61 centimetres. They also spawn in gravelly areas of lakes that are subject to spring upwellings and moderate water currents.
- Mature fish may travel many kilometres upstream to reach their spawning grounds.
- Eggs take four to six months to hatch. Young brook trout prefer quiet, shallow edges of streams and small brooks. Many of these small nursery brooks can be destroyed by human activity.





The excitement and wonder

that radiates from a child as he or she gazes into the eyes of the ever-elusive

lynx or witnesses the special bond between a mother caribou and her calf is just one of the many wonderful events that define Salmonier Nature Park as one our province's "special places."

Salmonier Nature Park opened its gates for its 33rd season on June 1 of this year. Since its opening in 1978, more than a million people have visited the park. Visitors are continually amazed and astonished at the diversity of Newfoundland and Labrador's wildlife, some of which is visible from the 3-km boardwalk trail. "Oohs" and "aaahs" can only begin to express the wonder of face-to-face encounters with owls, moose, foxes, mink, or the playful Newfoundland marten.

Park staff take pride in their role in helping visitors connect with nature during their visit to the park. As any of them will tell you, the only thing better than being a visitor to Salmonier Nature Park is working at Salmonier Nature Park. This is just as true for each of the seven students hired to assist with the education program at the park each year.

Students who accept interpreter positions at Salmonier Nature Park may first think of the job as a pay cheque for 14 weeks to help out with school in the fall. However, they quickly realize that a job at the park is an unforgettable experience that involves creativity, hard work and the

News from the Wildlife Division Summer 2011



development of very keen communication and interpretation skills.

After two weeks of intense training, students are immediately immersed in a whirlwind of activity. The park opening on June 1 not only marks the beginning of the public visitation program, but also brings the arrival of approximately 200 students each day who register as part of the park's formal on-site school programming.

Greeting visitors is just one duty of a student interpreter. Performing puppetry, and delivering slide shows, lectures and interpretive activities such as Project Wild is a real challenge, especially when programming levels may need to be adapted from Kindergarten to Grade 6 on a moment's notice.

order to be able to deliver educational programming, students must have a wide knowledge of the natural history of Newfoundland and Labrador, particularly as it relates to the wildlife and biodiversity of the park. Learning is a continuous process for all employees of Salmonier Nature Park.

After delivering interpretive programming to approximately 1,500 formal school students, a quick breather is realized for about a week — a week spent preparing for the influx of thousands of children and student leaders who are part of local summer recreation programs such as Boys and Girls Clubs. Once again, the parking lot becomes a sea of yellow as buses arrive with eager, excited children who can't wait to "see the animals, see a puppet show and visit the Gift Store."

Student interpreters are kept on their toes as they meet, greet, perform and interpret, carry out trail roves, assist with research, keep an eye to visitors as well as the animals, find lost items, and, most importantly, pass on their knowledge in a positive, friendly manner.

Throughout June, July and August, children seem to dominate the time of the student interpreters. However, while engaging in educational activities for the thousands of children who visit the park, our students also ensure that visitors from the public receive a positive, enlightening experience. At any given time, a student interpreter may be seen conversing with a visitor from Switzerland, Australia, South America, Toronto or St. John's.

The one thing all visitors from both inside and outside our province have in common is their sense that Salmonier Nature Park is like no other place they have visited – a very special place that needs to be nurtured and kept as natural as it is today. From opening day to closing day, student interpreters play a huge role in instilling this pride and affection for the park.

As summer closes and fall approaches, student interpreters depart with their 14 weeks of pay to help out with school. They also leave with the knowledge that they were instrumental in creating natural experiences and learning opportunities for every visitor to the park.

Whether they are business, nursing or biology students, they leave with a deep connection to and knowledge of our natural world, with well-developed communication skills and a sense they made a difference. Every student who works at Salmonier Nature Park looks forward to the following summer, when they hope they will be re-hired to fulfill another busy, rewarding season.



Not just another summer job ...

By Brenda Pike

Left, Danielle Curran feeds the toads displayed in the Visitor Centre. Top, Cheryl Pike greets a visitor at to the Park while Jessica Rose answers one of many telephone enquiries. Above, right, Robert Brown records information for the Plant Watch program. Photos: Michael Blackwood











Summer is a great time for families to explore our natural environment. It is a time of year when many wildlife species have their offspring and adult animals can comfortably nurture their newborns without having to deal with cold and deep snow. During the spring and summer, wildlife such as moose, bears and caribou will often be accompanied by their young and will use a variety of habitats in search of nutritious food to help them grow and prepare for the long winter ahead.

Other wildlife, such as waterfowl, will use small lakes, ponds and wetlands that offer protection from predators like fox and coyotes. Rivers, streams, bogs, wet-

lands and riparian habitats provide places for song birds to find a variety of foods such as insects, amphibians, fish and plants. Wildlife and wildlife habitat can be found not just in the countryside but just about

everywhere, including towns and cities. Exploring and learning more about wildlife can be fun and exciting, and is a healthy way to spend time with family, children and friends. Here are some ways you and your family can explore wildlife this summer.

Nature Walk

Talking a walk or hike on a nature trail or a known community trail is a great way to discover the attractions in your local area. Nature trails are often established by municipal governments, community groups and other organizations

> and may incorporate interpretative signage that can help explain wildlife, plants or other features in an area. Some trails actually have resting areas with picnic tables so you can stop and enjoy lunch in the great outdoors. If you don't have an established nature trail in your area, take a walk along a pond or beach where you can observe the types of wildlife that exist in the area. If you have a bird or plant guide it can be lots of fun identifying individual species, or taking a picture that you can later use to ask a wildlife expert or

search on the internet.

Wildlife Photography

Photography in the outdoors offers opportunities to connect with a variety of wildlife and their habitats. Discovering wildlife through photography can help develop your skills and maybe even turn you into a professional photographer. Timing and a unique perspective can lead to some great photos, even when using inexpensive equipment.

If you're photographing large animals like bear, moose or caribou, be careful not to get too close to avoid any possible conflicts, especially if newly born offspring are nearby. For close images of plants, shrubs, butterflies or insects, change your camera to a macro setting if possible to increase the picture quality and detail.

Bird Watching

Bird watching can help you discover the kinds of habitat that are important to bird life. In Canada, more than 200 bird species live in or near wetlands or other habitats. About onethird of these species are listed by the Committee on the Status of Endangered Wildlife in Canada.

The basic equipment needed for bird watching is a set of inexpensive binoculars and perhaps a pair of rubber boots. Bird identification guide books are available at book stores and libraries, or use internet guides if you're really technologically advanced and have access to the web on a personal electronic device such as an IPhone or Blackberrry.

Exploring Newfoundland & Labrador's

Camping
An overnight camping trip is a wonderful way to experience the outdoors and test your skills in setting up a tent or cooking breakfast over a camp fire or portable stove. Be sure to observe basic rules and precautions when burning a camp fire. There are

many easily accessible places to go on an overnight camping trip, with facilities to help make the stay a little more comfortable, such as a provincial park.

Setting up a tent and staying out overnight in your own back yard is a great way to learn about the activities of animals and hear the sounds of insects, toads, birds and maybe even a coyote. Many animals become more vocal during the early dawn and dusk, simply to let other animals know that this is their territory or to

attract a mate. Identifying animals by the sounds they make can be challenging, but with experience, it's lots of fun.

Photos, top, left to right: a closer look at a tadpole; Natasha Baldwin checks out a fox den; a family hike to Cedar Cove; Sarah Skinner picks wildflowers; Kaden and Tarik Rodrigues catching toads. Inset: Bears, squirrels, snowshoe hare and black-backed woodpecker are some of the wildlife species you might see on a nature hike. Wildlife Division staff photos

Fishing

Freshwater rivers, streams, creeks, ponds and lakes in Newfoundland and Labrador are home to 25 known species of fish and hundreds of invertebrates and aquatic plants. Going on a fishing trip will help you discover many of these species and with luck, can also result in a healthy, tasty meal. There are rules for fishing but basically a resident of the province can enjoy angling for trout just about anywhere for the cost of a hook, line, bobber, and bait.

Other opportunities for angling exist for salmon, which is a little more challenging but can also lead you to some of the most beautiful outdoor settings the province has to offer.

Canoeing/Boating

By Chris Baldwin

Aquatic life forms like fish and invertebrates are a source of food for a variety of other wildlife, including birds and mammals. Newfoundland and Labrador's freshwater systems are vital to our cities, towns and communities. Canoeing or boating on a pond, river or wetland brings us closer to a variety of animal and plant life that may be a little more difficult to see when walking along a shoreline. Using human power to paddle a canoe interferes less with water quality and is a great way to exercise. When canoeing or using any watercraft it's always important to wear a personal floatation device.

News from the Wildlife Division Summer 2011

Partners protecting waterfowl habitat

The Wildlife Division's Stewardship Section implements the Municipal Stewardship Program, which is unique in North America. The success of this program has been recognized both locally and internationally and has been heralded as an innovative and successful conservation program.





Deer Lake Mayor Dean Ball, Environment and Conservation Minister Ross Wiseman, and Humber Valley MHA Darryl Kelly signed a Municipal Wetland Stewardship Agreement for Deer Lake on June 13, 2011. *Photo: Heather Chaffey*

The Municipal

Stewardship Program

was developed to encourage municipalities, corporations and private landowners to recognize the value of wildlife habitat found within their jurisdiction, and then to accept a stewardship role in maintaining the integrity of that habitat. The Town of Deer Lake recently demonstrated just such a com-

mitment by officially signing a Municipal Wetland Stewardship Agreement with the Department of Environment and Conservation on June 13, 2011. The Honorable Ross Wiseman, Minister of Environment and Conservation, attended the public signing ceremony, where he was joined by Deer Lake Mayor Dean Ball, Humber Valley MHA Darryl Kelly, several town councilors, town staff and some members of the public.

By signing the stewardship agreement, the Town of Deer Lake publicly demonstrated, first, its desire to protect and maintain valuable wildlife habitat within the town's planning boundaries, and second, its commitment to moving towards environmental sustainability.

The experience of the Municipal Stewardship Program has shown the true strength of stewardship lies in the empowerment of not only town councils, but local residents and developers to conserve and enhance local wildlife habitat and act as responsible stewards of the envi-

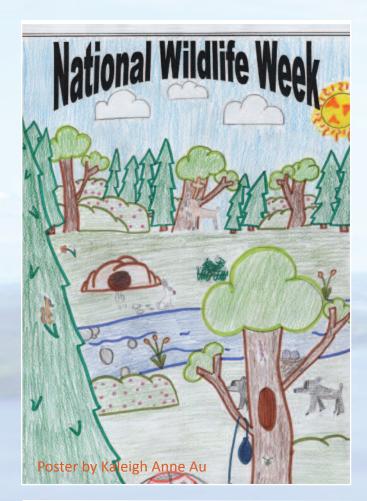
ronment. It is the day-to-day actions and attitudes of community members that play an important role in the overall sustainability and conservation of wildlife species.

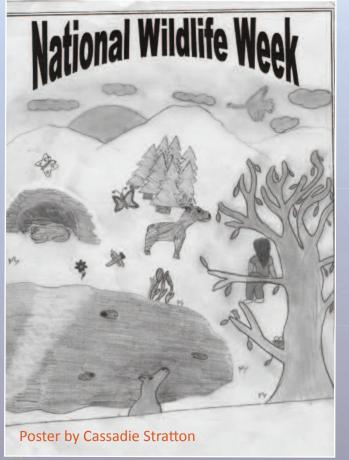
In addition to the Town of Deer Lake, 26 other municipalities have also signed stewardship agreements to preserve wetland and coastal habitat for waterfowl and other wildlife, as well as habitat for rare and endangered species. Several agreements with corporations and private landowners have also been signed across the province.



- Charmaine Barney















National Wildlife Week 2011

was a celebration of wildlife and nature, and two students from Humber Elementary in Corner Brook recently had a chance to experience both first hand.

Twelve-year-old Grade 6 students Kaleigh Anne Au and Cassadie Stratton were the winners of the Wildlife Division's National Wildlife Week poster contest. Each submitted a drawing depicting what they like to do in the woods. The grand prize was a chance to become a biologist for a day and a helicopter ride to observe woodland caribou. Pilot Chris Gosse flew the students over Caribou Pass on the Buchans Plateau, while big game biologist Casidhe Dyke of the Wildlife Division shared his limitless knowledge of the caribou and their natural habitat.

Along for the ride were Sonya Dewling, the girls' Grade 6 teacher; and myself. As a Fish and Wildlife Technician student at the College of the North Atlantic working with the Wildlife Division for the summer, this trip was also my first experience in a helicopter, and it made for one of the most educational and eye-opening experiences of my life.

Top photo, left: National Wildlife Week poster contest winners Cassadie Stratton and Kaleigh Anne Au aboard a Universal Helicopter searching for woodland caribou. Centre: Success! Right: the crew consisted of wildlife biologist Casidhe Dyke, Kaleigh Anne, pilot Chris Gosse, Cassadie, Wildlife Division summer student Tina Cassell, and Grade 6 teacher Sonya Dewling. Helicopter time for this prize was donated by Universal Helicopter Ltd. Above: Casidhe, Cassadie and Kaleigh Anne prepare to take off.

Although I was watching Kaleigh and Cassadie's expressions and making sure they were okay, I am not sure whose smile was bigger, theirs or mine. We were all excited throughout the entire journey, snapping pictures to ensure not a moment was missed. Witnessing caribou on their natural habitat, along with Newfoundland's rugged and serene landscape, was absolutely breathtaking. The trip was a great way to give potential biologists a taste of the profession and the many opportunities available in the field of wildlife and natural resource management.















Wildlife Division Staff Retreat 2011





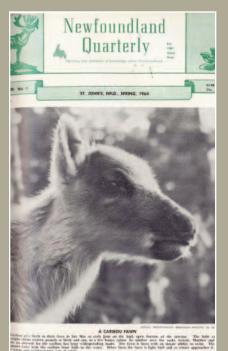
ike many extended families, members of the Wildlife Division don't get to see each other often enough. This past May, staff from offices in St. John's, Corner Brook, Happy Valley-Goose Bay and Salmonier Nature Park came together at Killdevil Camp for a family reunion. Staff participated in the Amazing Wildlife Experience, facing challenges such as kettle overboiling and blindfolded tent-building. Staff also had some fun practicing archery, axe-throwing, and lawn fly fishing. Ther retreat was a great team-building opportunity and a chance to reconnect with peers in an informal setting.











Summer is here! If you're looking for some **Ideal Camping-Out Places**, check out this article by J.F. Downey from the **December 1917** (Volume 17, Number 3) edition of *The Newfoundland Quarterly*. The Bay of Islands stretch from Humbermouth to Curling, which "may be covered on foot along a pituresque road that presents a succession of magnificent views of the Bay and its Arms, or it may be done by train or by the motor ferry." Many of us today follow this route to the Wildlife Division's HQ in Corner Brook, and the view is still spectacular.

For more spectacular views, visit **20 Beauty Spots of Newfoundland** a pictoral published circa 1920-1940 by Corner Brook photog rapher J.C. Parsons. Salmon angling takes centr stage in some black and white views from the

And speaking of spectacular, the **Spring 1964** edition of the Newfoundland Quarterly feature a caribou fawn on the cover, accompanied by Migrating Caribou, a short article on the "spectacular and successful wildlife management operation recently concluded at Victoria Lake."

A team of wildlife biologists captured, tagged and released 95 migrating caribou, and this art cle is an account of how they did it.

> Images and links from **Digital Archives Initiative** Centre for Newfoundland Studies **Memorial Universit**





Our Wildlife

is the quarterly newsletter of the Wildlife Division.

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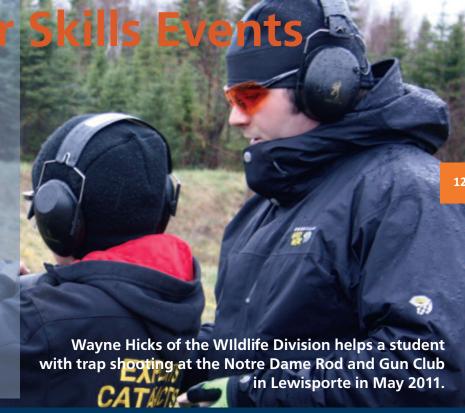
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Newsletter coordination/design: Linda Skinner Wildlife Division

The mandate of the Wildlife Division is to protect and conserve Newfoundland and Labrador's biodiversity and manage its wildlife and inland fish resources for the benefit of present and future generations. To deliver on this mandate requires an incredible amount of work, both in the field and at the office. It is our hope that these newsletters will provide a snapshot into the work of the professionals who are striving to fulfill this mandate, and to highlight the complex nature of wildlife research and management.

Youth Hunter Skills Events provide opportunities to learn about wildlife conservation and practice shooting skills in a safe environment with qualified instructors and volunteers. The Wildlife Division's Conservation Services section facilitates several events in cooperation with local Rod and Gun Clubs.

Contact 637-2006 for information on an event near you.



Department of Environment & Conservation

Wildlife Division

